

**'RAMADA':
NEW VARIETY OF SWEET SORGHUM
OR POTENTIAL SUGAR PRODUCTION
IN SOUTH TEXAS**

**ARS-S-41
April 1974**

AUTHORS' ADDRESSES

K. C. Freeman and D. M. Broadhead, research agronomists, and N. Zummo, plant pathologist, U.S. Sugar Crops Field Station, Southern Region, Agricultural Research Service, U.S. Department of Agriculture, Meridian, Miss. 39301.

W. R. Cowley, professor and resident director of research, and K. A. Sund, associate professor, Texas A&M University Research and Extension Center, Weslaco, Tex. 78596.

D. T. Rosenow, assistant agronomist, Grain Sorghum, Texas A&M University Agricultural Research and Extension Center, Lubbock, Tex. 79401.

B. A. Smith, research chemist, Food Crops Utilization Unit, Southern Region, Agricultural Research Service, U.S. Department of Agriculture, Weslaco, Tex. 78596.

Lucas Reyes, research scientist, Field Crops Center, Texas A&M University Agricultural Research Station, Beeville, Tex. 78102.

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE
in cooperation with
Texas Agricultural Experiment Stations
Beeville, Lubbock, and Weslaco
and
Mississippi Agricultural and Forestry Experiment Station
Mississippi State

'RAMADA': A NEW VARIETY OF SWEET SORGHUM FOR POTENTIAL SUGAR PRODUCTION IN SOUTH TEXAS

By K. C. Freeman, W. R. Cowley, B. A. Smith, N. Zummo, Lucas Reyes,
D. M. Broadhead, D. T. Rosenow, and K. A. Sund

A new variety of sweet sorghum, *Sorghum bicolor* (L.) Moench, for potential sugar production in South Texas is available in 1974. The variety is named 'Ramada'. Tests at Weslaco, Tex., indicate the adaptability of 'Ramada' to that area and show that its quality is adequate for potential sugar production. It is more vigorous than 'Rio'.

'Ramada' is a selection from the progeny of the cross ('Mer. 45-45' × 'MN 1056') × ('MN 1054' × 'MN 1060'), made at Meridian, Miss. It was evaluated in Mississippi and at two locations in Texas as experimental selection 'Mer. 65-2'.

A limited supply of 'Ramada' seed is available from the Foundation Seed Service, Texas Agricultural Experiment Station, College Station, Tex. The new variety is sensitive to day length and should be planted about May 1 for maximum yield.

DESCRIPTION

The panicle (seed head) of 'Ramada' is erect, compact, and ellip-

soid. At maturity, the thin, straw-colored glumes cover only the base of the seed and tend to roll inward at the edges. Since the glumes do not clasp the seed, they are easily separated and removed in threshing.

The color of the seed coat varies from white to creamy white except at the point of attachment to the spike, which is dark brown, and at the base of the style in the tip of the mature grain, where there is a dark brown spot. The seeds are medium to large and slightly flattened.

The endosperm contains a relatively large amount of corneous starch. The pericarp is essentially transparent and colorless. The aleurone layer also is colorless.

TEST RESULTS

'Ramada' was tested against 'Rio' at Lubbock, Tex., in 1969 and at Weslaco, Tex., from 1968 through 1972. The results are summarized in table 1, along with data on 'Roma', a variety released in 1971 that has also shown potential for sugar production in South

Texas. The 1-year test at Lubbock showed that 'Ramada' does not produce as well as 'Rio' in West Texas. Whereas 'Ramada' stalk yield was 135 percent of 'Rio' yield at Weslaco, it was only 70 percent at Lubbock.

The 5-year average performance of 'Ramada' at Weslaco indicates its potential for sugar production in South Texas, where the growing season is longer. The Brix, sucrose content, and sugar production per acre obtained with 'Ramada' were 93, 89, and 117 percent of those obtained with 'Rio'. The lowest 'Ramada' values for these categories of data were obtained in 1971, when all three varieties were harvested 83 days after planting. Under ideal growing

conditions, 'Ramada' generally matures about 2 weeks later than 'Rio'.

In 1972 all varieties lodged near 100 percent because of a hurricane. The yield of sugar, indicated by low Brix, was low in 'Rio', 'Roma', and 'Ramada', since premature lodging inhibited the build-up of normal sugar in the stalk juice.

'Ramada' resisted downy mildew in nursery tests at Berclair, Tex., and rust in nursery tests at Houma, La. Only one seed head showed race 3 head smut during 3 years of screening at Beeville, Tex. At Meridian, Miss., 'Ramada' resisted leaf anthracnose and red rot after trash inoculation in the field and tolerated methyl parathion spray.

TABLE 1.—Comparison of 'Roma' and 'Ramada' with 'Rio' at Lubbock and Weslaco, Tex.

Test location and year	Millable stalks				Juice analysis				Purity 'Roma' 'Ramada'	
	'Rio' (tons)		per acre		Brix		Sucrose			
	Pct of 'Rio' 'Roma' Ramada'	'Rio' 'Roma' Ramada'	Pct of 'Rio'	'Roma' 'Ramada'	(pct)	'Roma'	Pct of 'Rio'	'Roma' 'Ramada'		
Lubbock:										
1969	21.1	93	70	18.5	92	95	14.7	92	99	
Mean	16.8	139	135	19.6	94	93	15.1	90	99	
Weslaco:										
1968	15.2	149	153	19.6	94	96	15.5	92	94	
1969	19.1	147	148	20.5	91	92	16.1	87	88	
1970	16.2	150	135	19.0	98	94	13.9	97	90	
1971	17.6	114	112	20.5	90	87	15.9	81	79	
1972	16.1	133	127	18.6	96	95	14.3	93	94	
Mean	16.8	139	135	19.6	94	93	15.1	90	99	
Calculated sugar										
Days to maturity										
Per ton of stalks										
Per acre										
Lubbock:										
1969	205.8	92	94	2,800	80	64	165	165	165	
Weslaco:										
1968	216.7	90	92	3,294	138	140	113	131	120	
1969	223.0	85	86	4,259	126	126	106	118	118	
1970	186.0	96	87	3,013	144	117	112	112	106	
1971	220.0	76	74	3,879	87	84	83	83	83	
1972	186.4	77	94	3,020	102	120	107	121	121	
Mean	206.4	85	87	3,493	119	117	104	113	110	

